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Kristofer E Elbing
187 Pelham Island Road
Wayland, MA 01778

EXAMINER	
THOMPSON, JAMES A	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/667,900	PINARD ET AL.	
	Examiner	Art Unit	
	James A. Thompson	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34 and 36-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34 and 36-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 May 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 16 May 2007 have been fully considered but they are not persuasive.

Regarding page 13, line 2 to page 14, line 6: For the reasons presented in the present Response to Arguments, the prior art rejections set forth in the previous office action, mailed 02 April 2007, are maintained and the present action is made final.

Regarding page 14, line 7 to page 15, line 11: Firstly, it is not merely the teaching found in Bowers (USPN 5,296,947) of "applying a second rendering technique to the print data (figure 4(160) of Bowers), wherein the first and second techniques are different (column 6, lines 48-63 of Bowers)" that is equated with the recited limitation "applying a second halftoning technique to the print data, wherein the first and second halftoning techniques are different", but rather the combination of Bowers and Usami (USPN 5,781,709) that teaches said limitation. Bowers, rather than applying a second halftoning technique to the print data for soft-proofing instead applies a second rendering technique. This is due to the fact that the already halftoned data (figure 4(154) of Bowers) is then output to a display (figure 4(160, 40) of Bowers) for soft-proofing the data that is printed on the printer (figure 4(156) of Bowers). It is the destination of the print data which has already been processed by the first halftoning technique that requires that said print data be *rendered* rather than *halftoned* by a second technique. In other words, since the destination of the already halftoned print data is a soft-proofing display device, rather than an alternate printer, the second technique is a rendering technique rather than a halftoning technique. If Bowers had instead taught that the proofing system was a proofing printer which halftoned the already halftoned print data, then the second technique would be a second halftoning technique.

By combination with Usami, the second technique is a second halftoning technique, which is different from the first halftoning technique. In Usami, the printed output (figure 1(CPb) of Usami) generated by the digital printer (figure 1(3) of Usami) is generated using a halftoning technique. The resultant print is a hardcopy print based on the converted RGB data which has its colors in conformity with the printed color document (figure 1(12) of Usami), and reproduces the halftone dot image structure (including Moire, Rosette and other image structures) [see, *e.g.*, column 11, lines 1-18 of Usami]. Thus, the technique by which the hardcopy output of the digital printer is produces can properly be deemed a halftoning process. Said halftoning process, since it is based on RGB data converted from tristimulus values, is also clearly different from the first halftoning process which produces the CMYK halftone data

used to generate the printed color document (figure 1(12) of Usami) and the first halftoning process which produces the CMYK halftone data taught by Bowes (figure 4(154) of Bowers).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 8, 17-18 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers (US Patent 5,296,947) in view of Usami (US Patent 5,781,709).

Regarding claim 1: Bowers discloses receiving halftoned primary color print data to be printed on a target halftone printer (figure 4(154,156) and column 6, lines 43-48 of Bowers), wherein the halftoned primary color print data has been produced by a first halftoning technique (column 4, line 66 to column 5, line 6 of Bowers), and wherein the first halftoning technique is at least comparable to a target halftoning technique used by the target halftone printer (column 6, lines 43-48 of Bowers); applying a second rendering technique to the print data (figure 4(160) of Bowers), wherein the first and second techniques are different (column 6, lines 48-63 of Bowers); and providing the data to a proofing device different from the target halftone printer (figure 6(40) and column 6, lines 51-63 of Bowers), wherein the first and second techniques are selected to: (a) cause a dot size in the data provided to the proofing device to substantially match a dot size for the halftone printer (figure 1; figure 3; column 5, line 63 to column 6, line 20; and column 6, lines 32-36 of Bowers), and (b) cause a proof produced by the proofing device to substantially match the color of a print produced by the target halftone printer (column 6, lines 60-63 of Bowers).

Bowers does not disclose expressly that said target halftone printer is specifically a halftone printing press; that second rendering technique is specifically a halftoning technique; that said proofing device is specifically a proofing printer.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami); a second halftoning technique (figure 1(3,CPb) and column 6, lines 22-28 of Usami) performed on image data produced by a first halftoning technique (figure 1(S8); column 6, lines 8-11 and

lines 31-33; and column 6, line 62 to column 7, line 7 of Usami); and a proofing device that is specifically a proofing printer (figure 1(3) and column 1, lines 61-62 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a halftoning technique on already halftoned data before outputting the resultant data to a proofing printer, as taught by Usami, rather than the digital processing performed to output the already halftoned data to a proofing display, as taught by Bowers. The motivation for doing so would have been that generating a printout on a normal halftone printer provides a quick check before generating the printing plates needed for printing press printing (column 1, lines 24-30 of Usami). Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for high-output, high-reliability printing. Therefore, it would have been obvious to combine Usami with Bowers to obtain the invention as specified in claim 1.

Regarding claim 3: Bowers discloses that the print data are color print data including a plurality of color-separated data subsets (column 6, lines 43-48 of Bowers) and wherein the step of applying a first halftoning technique and the step of applying a second rendering technique are applied to the data subsets (figure 4; and column 6, lines 43-48 and lines 54-63 of Bowers). By combination with Usami, as set forth in the arguments regarding claim 1 above, the second rendering technique taught by Bowers is a second halftoning technique.

Regarding claim 8: Bowers discloses that the step of applying a first halftoning technique and the step of applying a second rendering technique are applied as a single simultaneous process (column 7, lines 4-17 of Bowers – *softproofer includes the first halftoning technique as part of the determination of how the second rendering technique is to be performed*). By combination with Usami, as set forth in the arguments regarding claim 1 above, the second rendering technique taught by Bowers is a second halftoning technique.

Regarding claim 17: Bowers discloses a proof generation apparatus (figure 4 of Bowers) comprising a primary color print data input (figure 4("cmyk") of Bowers) responsive to a first halftone processor (figure 4(154) of Bowers) employing a first halftone technique (column 4, line 66 to column 5, line 6 of Bowers), wherein the first halftoning technique is at least comparable to a target halftoning technique used by the target halftone printer (column 6, lines 43-48 of Bowers); a second rendering processor (figure 4(160) of Bowers) employing a second rendering technique, wherein the first and

second techniques are different (column 6, lines 48-63 of Bowers) and are selected to (a) cause a dot size in the data provided to the print data input to substantially match a dot size for the halftone printer (figure 1; figure 3; column 5, line 63 to column 6, line 20; and column 6, lines 32-36 of Bowers), and (b) substantially match the color of a print produced by the target halftone printer and a processed primary color print data output (column 6, lines 60-63 of Bowers).

Bowers does not disclose expressly that said target halftone printer is specifically a halftone printing press; that second rendering technique is specifically a halftoning technique; that said proofing device is specifically a proofing printer.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami); a second halftoning technique (figure 1(3,CPb) and column 6, lines 22-28 of Usami) performed on image data produced by a first halftoning technique (figure 1(S8); column 6, lines 8-11 and lines 31-33; and column 6, line 62 to column 7, line 7 of Usami); and a proofing device that is specifically a proofing printer (figure 1(3) and column 1, lines 61-62 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a halftoning technique on already halftoned data before outputting the resultant data to a proofing printer, as taught by Usami, rather than the digital processing performed to output the already halftoned data to a proofing display, as taught by Bowers. The motivation for doing so would have been that generating a printout on a normal halftone printer provides a quick check before generating the printing plates needed for printing press printing (column 1, lines 24-30 of Usami). Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for high-output, high-reliability printing. Therefore, it would have been obvious to combine Usami with Bowers to obtain the invention as specified in claim 17.

Regarding claim 18: Bowers discloses a proof generation apparatus (figure 4 of Bowers) comprising means for receiving primary color print data (figure 4("cmyk") of Bowers) to be printed on a target halftone printer (figure 4(154,156) and column 6, lines 43-48 of Bowers) from means for applying a first halftoning technique to the print data (figure 4(154) and column 4, line 66 to column 5, line 6 of Bowers), wherein the first halftoning technique is at least comparable to a target halftoning technique used by the target halftone printer (column 6, lines 43-48 of Bowers); means for applying (figure 4(160) of Bowers) a second rendering technique to the print data, wherein the first and second techniques are

different (column 6, lines 48-63 of Bowers) and are selected to (a) cause a dot size in the data provided to the proofing device to substantially match a dot size for the halftone printer (figure 1; figure 3; column 5, line 63 to column 6, line 20; and column 6, lines 32-36 of Bowers), and (b) cause a proof produced by the proofing device to substantially match the color of a print produced by the target halftone printer (column 6, lines 60-63 of Bowers); and means for providing the data to a proofing device different from the target halftone printer (column 6, lines 51-63 and column 7, lines 33-36 of Bowers).

Bowers does not disclose expressly that said target halftone printer is specifically a halftone printing press; that second rendering technique is specifically a halftoning technique; that said proofing device is specifically a proofing printer.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami); a second halftoning technique (figure 1(3,CPb) and column 6, lines 22-28 of Usami) performed on image data produced by a first halftoning technique (figure 1(S8); column 6, lines 8-11 and lines 31-33; and column 6, line 62 to column 7, line 7 of Usami); and a proofing device that is specifically a proofing printer (figure 1(3) and column 1, lines 61-62 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform a halftoning technique on already halftoned data before outputting the resultant data to a proofing printer, as taught by Usami, rather than the digital processing performed to output the already halftoned data to a proofing display, as taught by Bowers. The motivation for doing so would have been that generating a printout on a normal halftone printer provides a quick check before generating the printing plates needed for printing press printing (column 1, lines 24-30 of Usami). Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for high-output, high-reliability printing. Therefore, it would have been obvious to combine Usami with Bowers to obtain the invention as specified in claim 18.

Regarding claim 42: Bowers discloses that the step of receiving, the step of applying a second rendering technique, and/or the step of applying a first halftoning technique are at least partially combined such that the steps of applying the first and second techniques overlap at least in part (column 7, lines 4-17 of Bowers – *softproofer includes the first halftoning technique as part of the determination of how the second rendering technique is to be performed*). By combination with Usami, as set forth in the

arguments regarding claim 1 above, the second rendering technique taught by Bowers is a second halftoning technique.

4. Claims 2, 4, 10, 12-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers (US Patent 5,296,947) in view of Usami (US Patent 5,781,709) and Vinck (US Patent 5,953,988).

Regarding claim 2: Bowers discloses printing using a first halftone technique (column 4, line 66 to column 5, line 6 of Bowers) and a second rendering technique (figure 4(160) and column 6, lines 48-63 of Bowers). By combination with Usami, as set forth in the arguments regarding claim 1 above, the second rendering technique taught by Bowers is a second halftoning technique.

Bowers in view of Usami does not disclose expressly that said first halftoning technique applies a halftoning technique that employs constantly spaced dots of variable sizes and said second halftoning technique applies a stochastic halftoning technique to the constantly spaced dots of variable sizes.

Vinck discloses a halftoning technique that employs constantly spaced dots of variable sizes (figure 2(24) and column 4, lines 47-49 of Vinck) and a stochastic halftoning technique (figure 2(25) and column 4, lines 49-50 of Vinck), wherein the dots of said stochastic halftoning technique are equally sized (column 4, lines 50-52 of Vinck).

Bowers in view of Usami is combinable with Vinck because they are from the same field of endeavor, namely halftone processing of image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a halftoning technique that employs constantly spaced dots of variable size for the first halftoning technique and a stochastic halftoning technique for the second halftoning technique. The motivation for doing so would have been to create various shades of color (column 3, lines 29-37 of Vinck). Therefore, it would have been obvious to combine Vinck with Bowers in view of Usami to obtain the invention as specified in claim 2.

Regarding claim 4: Bowers discloses that the step of applying a first halftoning technique employs dots from a first set of primary colors (figure 1 and column 6, lines 43-48 of Bowers) and the step of applying a second rendering technique (figure 4(160) and column 6, lines 48-63 of Bowers). By combination with Usami, as set forth in the arguments regarding claim 1 above, the second rendering technique taught by Bowers is a second halftoning technique.

Bowers in view of Usami does not disclose expressly that applying said second halftoning technique adds at least a second of the primary colors to a portion of one or more of the dots assigned to a first of the primary colors based on the first halftoning technique.

Vinck discloses that said first halftoning technique employs constantly spaced dots of variable sizes (figure 2(24) and column 4, lines 47-49 of Vinck) and said second halftoning technique is a stochastic halftoning technique (figure 2(25) and column 4, lines 49-50 of Vinck), the dots of said stochastic halftoning technique being of equal size (column 4, lines 50-52 of Vinck). Said first halftoning screen and said second halftoning screen both use sets of primary colors (column 5, lines 16-19 of Vinck). With a constantly spaced halftoning screen with dots of variable sizes used in conjunction with a stochastic halftoning screen with dots of equal size, dots of different primary colors will inherently overlap each other in some areas of the image. Therefore, at least a second of the primary colors is added to a portion of one or more of the dots assigned to a first of the primary colors based on the first halftoning technique.

Bowers in view of Usami is combinable with Vinck because they are from the same field of endeavor, namely halftone processing of image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use two different halftone screens to add primary colors from the second halftone screen to a portion of a primary color of the first halftone screen. The motivation for doing so would have been to extend the printable color gamut (column 5, lines 22-24 of Vinck). Therefore, it would have been obvious to combine Vinck with Bowers in view of Usami to obtain the invention as specified in claim 4.

Regarding claim 10: Said first halftoning technique employs constantly spaced dots of variable sizes and said second halftoning technique is a stochastic halftoning technique, the dots of said stochastic halftoning technique being of equal size, as discussed in the arguments regarding claim 2 above, which are incorporated herein.

In a stochastic halftoning technique, the areas in which ink is not printed will inherently overlap the areas in which ink is printed in a halftoning technique that employs constantly spaced dots of variable sizes, as can be seen by comparing the halftone patterns of figure 2(24) and figure 2(25) of Vinck. Preventing the printing of ink will therefore inherently lighten colorant values for at least some areas of at least some of the dots from said first halftoning technique.

Regarding claim 12: Said first halftoning technique employs constantly spaced dots of variable sizes and said second halftoning technique is a stochastic halftoning technique, the dots of said stochastic halftoning technique being of equal size, as discussed in the arguments regarding claim 2 above which are incorporated herein. Both halftoning techniques use sets of primary colors (column 6, lines 44-63 of Bowers).

Since the dot sizes for the constantly spaced halftone screen are variable and the dot sizes for the stochastic halftone screen are constant, at a particular grayscale level for each color, said grayscale level depending on the size of the dots of said stochastic halftoning technique, no printing will occur in an area for one primary color of the first halftone screen and printing will occur in the same area for another primary color of the second halftone screen, thus substituting the colors. The area in which nothing is printed for the first halftone screen will coincide with and be equal to the area in which a dot is printed for the second halftone screen. Therefore, applying said second halftoning technique to said first halftoning technique will inherently cause the substitution of colorant from at least some areas of at least some of the dots from the first halftoning technique with a different colorant.

Regarding claim 13: Bowers discloses that the step of applying a first halftoning technique employs dots (figure 1 and column 6, lines 64-66 of Bowers).

Bowers in view of Usami does not disclose expressly that the step of applying a second halftoning technique causes the overlaying of colorant from at least some areas of at least some of the dots from the first halftoning technique with a different colorant.

Vinck discloses overlaying colorant from at least some areas of at least some of the dots from a first halftoning technique with a different colorant (figure 4; column 4, lines 59-61; and column 5, lines 30-33 of Vinck).

Bowers in view of Usami is combinable with Vinck because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to overlay different colorants. The motivation for doing so would have been to produce a larger variety of colors (column 5, lines 30-33 of Vinck). Therefore, it would have been obvious to combine Vinck with Bowers in view of Usami to obtain the invention as specified in claim 13.

Regarding claim 15: Said first halftoning technique employs constantly spaced dots of variable sizes and said second halftoning technique is a stochastic halftoning technique, the dots of said stochastic halftoning technique being of equal size, as discussed in the arguments regarding claim 2 above which are incorporated herein. Both halftoning techniques use sets of primary colors (column 6, lines 44-63 of Bowers).

Color halftoning inherently creates a plurality of areas as individual pixels since color halftoning uses a plurality of dots at specific locations to represent an image. Therefore, applying said first halftoning technique and said second halftoning technique inherently causes the creation of a plurality of areas as individual pixels.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers (US Patent 5,296,947) in view of Usami (US Patent 5,781,709), Vinck (US Patent 5,953,988), and Gondek (US Patent 5,949,965).

Regarding claims 5 and 6: Bowers discloses that the step of applying a first halftoning technique employs dots from a first set of primary colors (figure 1 and column 6, lines 43-48 of Bowers) and the step of applying a second rendering technique (figure 4(160) and column 6, lines 48-63 of Bowers). By combination with Usami, as set forth in the arguments regarding claim 1 above, the second rendering technique taught by Bowers is a second halftoning technique.

Bowers in view of Usami does not disclose expressly that the step of applying said second halftoning technique adds at least a first additional color to a portion of one or more of the dots assigned to a first of the primary colors based on the first halftoning technique.

Vinck discloses applying a halftone screen with constantly spaced, variable sized dots (figure 2 (24) of Vinck) and a stochastic halftone screen (figure 2(25) of Vinck) with constant sized dots (column 4, lines 46-54 of Vinck).

Bowers in view of Usami is combinable with Vinck because they are from the same field of endeavor, namely halftone processing of image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use halftone screen with constantly spaced, variable sized dots for the first halftoning technique and the stochastic halftone screen for the second halftone technique. The motivation for doing so would have been to extend the printable color gamut (column 5, lines 22-24 of Vinck). Therefore, it would have been obvious to combine Vinck with Bowers in view of Usami.

With a constantly spaced halftoning screen with dots of variable sizes used in conjunction with a stochastic halftoning screen with dots of equal size, dots of different primary colors will inherently overlap each other in some areas of the image. Therefore, at least one color will be added to a portion of one or more of the dots assigned to a first of the primary colors based on the first halftoning technique.

Bowers in view of Usami and Vinck does not disclose expressly that said one color that will be added is an additional color that will added to a first of the primary colors based on the first halftoning technique.

Gondek discloses printing additional color planes as part of the available color palette (column 7, lines 1-4 of Gondek).

Bowers in view of Usami and Vinck is combinable with Gondek because they are from the same field of endeavor, namely halftone printing and image processing. At the time of the invention, it would

have been obvious to a person of ordinary skill in the art to include an additional color as part of the color palette for the second halftoning technique. The motivation for doing so would have been to have more colors with which to reproduce a desired tone (column 7, lines 1-4 of Gondek). Therefore, it would have been obvious to combine Gondek with Bowers in view of Usami and Vinck to obtain the invention as specified in claims 5 and 6.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers (US Patent 5,296,947) in view of Usami (US Patent 5,781,709) and Spence (US Patent 5,333,069).

Regarding claim 7: Bowers in view of Usami does not disclose expressly receiving a target printing press selection command and selecting parameters for the second halftoning technique based on the target printing press selection command.

Spence discloses receiving a target printing press selection command (column 25, line 67 to column 26, line 4 of Spence) and selecting parameters for the halftoning technique based on the target printing press selection command (column 26, lines 5-10 of Spence). The colorimetric data for the target image is obtained and managed by the user (column 26, lines 2-4 of Spence) which works in conjunction with a selection of the target printing press (column 26, lines 4-5 of Spence). The colorimetric and densitometric data for proofing is also managed by the user (column 26, lines 5-10 of Spence).

Bowers in view of Usami is combinable with Spence because they are from the same field of endeavor, namely image data printing and proofing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to be able to select the target printing press, along with the halftoning technique (which would be the second halftoning technique *as per* the combination of Bowers and Usami) to be used on the target printing press, as taught by Spence. The motivation for doing so would have been to allow for the proofing of many different types of printers, thus providing greater flexibility for the end user. Therefore, it would have been obvious to combine Spence with Bowers in view of Usami to obtain the invention as specified in claim 7.

7. Claims 9, 11, 14, 19, 21-29, 31-34 and 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers (US Patent 5,296,947) in view of Usami (US Patent 5,781,709) and Rylander (US Patent 5,602,572).

Regarding claim 9: Bowers discloses including the step of outputting the data with a proofing device different from the target halftone printer (figure 4(40) of Bowers is different from figure 4(156) of Bowers). By combination with Usami, as set forth in the arguments regarding claim 1 above, the

proofing device is a proofing printer which outputs by printing and the target halftone printer is a target halftone printing press.

Bowers in view of Usami does not disclose expressly that said proofing printer is an ink jet printer.

Rylander discloses printing using ink jet printers (column 4, lines 32-36 of Rylander).

Bowers in view of Usami is combinable with Rylander because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an ink jet printer for a proofing printer. The suggestion for doing so would have been that inkjet printers are an alternate means by which halftone dots are printed. Furthermore, as is well-known in the art, inkjet printers are cheaper and more readily available than most other printers, such as laserjet printers. Therefore, it would have been obvious to combine Rylander with Bowers in view of Usami to obtain the invention as specified in claim 9.

Regarding claim 19: Bowers discloses receiving print data to be printed on a target halftone printer (figure 4(154,156) and column 6, lines 43-48 of Bowers) to which a first halftoning technique has been applied (column 4, line 66 to column 5, line 6 of Bowers) to obtain screen image data representing a plurality of screen dots, which yield a shaded visual representation of the image when printed on a printer (figure 1 and column 4, lines 20-34 of Bowers), wherein the method is optimized to accurately reproduce the shaded visual image that would be printed on the printer by (a) causing a dot size in the data provided to the proofing device (figure 4(40) of Bowers) to substantially match a dot size for the halftone printer (figure 1; figure 3; column 5, line 63 to column 6, line 20; and column 6, lines 32-36 of Bowers), and (b) causing a proof produced by the proofing device to substantially match the color of a print produced by the target halftone printer (column 6, lines 60-63 of Bowers).

Bowers does not disclose expressly creating one or more lightened areas where direct deposition of colorant is to be lightened inside the edge of at least some of the screen dots to be printed but were indirect deposition colorant from overlapping areas is to remain by refraining from printing a subset of pixels within the periphery of a dot; that said target halftone printer is specifically a halftone printing press; and that said proofing device is specifically an ink jet proofing printer.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami); and a proofing device that is specifically a proofing printer (figure 1(3) and column 1, lines 61-62 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious

to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for high-output, high-reliability printing. Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the resultant data to a proofing printer, as taught by Usami, rather than a proofing display, as taught by Bowers. The motivation for doing so would have been that generating a printout on a normal halftone printer provides a quick check of the actual printed output before generating the printing plates needed for printing press printing (column 1, lines 24-30 of Usami). Therefore, it would have been obvious to combine Usami with Bowers.

Bowers in view of Usami does not disclose expressly creating one or more lightened areas where direct deposition of colorant is to be lightened inside the edge of at least some of the screen dots to be printed but where indirect deposition colorant from overlapping areas is to remain by refraining from printing a subset of pixels within the periphery of a dot; and that said proofing printer is specifically an ink jet printer.

Rylander discloses creating one or more lightened areas where direct deposition of colorant is to be lightened inside the edge of at least some of said screen dots to be printed (figure 5 and column 6, lines 36-40 of Rylander), but where indirect deposition colorant from overlapping areas is to remain by refraining from printing a subset of pixels within the periphery of a dot (figure 9 and column 7, lines 45-50 of Rylander); and printing using ink jet printers (column 4, lines 32-36 of Rylander). The inside of the dot is lightened ("thinned"), whereas the edge of the dot is not lightened ("unthinned") (column 6, lines 36-40 of Rylander).

Bowers in view of Usami is combinable with Rylander because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an ink jet printer for a proofing printer. The suggestion for doing so would have been that inkjet printers are an alternate means by which halftone dots are printed. Furthermore, as is well-known in the art, inkjet printers are cheaper and more readily available than most other printers, such as laserjet printers. Additionally, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to thin the inside of a halftone dot without thinning the edge of the halftone dot. The motivation for doing so would have been to enable higher addressability for an inkjet printer while preventing problems of over-inking that tend to occur in inkjet printing (column 2, lines 28-34 of Rylander). Therefore, it would have been obvious to combine Rylander with Bowers in view of Usami to obtain the invention as specified in claim 19.

Further regarding claim 21: Rylander discloses the step of printing the data with overlapping dots for the overlapping raster pattern (column 5, lines 31-39 of Rylander) using an ink-jet proofing printer different from the target halftone printing press (column 4, lines 32-36 of Rylander).

Further regarding claim 22: Rylander discloses that the step of creating creates the lightened areas as individual pixels (figure 5 and column 6, lines 29-40 of Rylander).

Further regarding claim 23: Rylander discloses that the steps of creating and providing are adapted to produce complete overlap (column 5, lines 35-39 of Rylander) of the lightened areas (figure 9 and column 7, lines 41-48 of Rylander). Higher density dots are thinned more since more thinning is required to prevent over-inking for higher density dots (figure 9; column 5, lines 35-39; and column 7, lines 41-48 of Rylander). Thus, complete overlap is produced for lightened areas, such as the higher density dots.

Regarding claims 24 and 25: Bowers discloses a print data input (figure 4("cmyk") of Bowers) responsive to a series of screen dots from first halftone processor (figure 4(154) and column 6, lines 43-48 of Bowers) employing a first halftoning technique (column 4, line 66 to column 5, line 6 of Bowers), wherein the plurality of dots yield a shaded visual representation of the image when printed on a printer (figure 1 and column 4, lines 20-34 of Bowers), wherein the apparatus is optimized to accurately reproduce a shaded visual image that would be printed on the printer by (a) causing a dot size in the data provided to the proofing device (figure 4(40) of Bowers) to substantially match a dot size for the halftone printer (figure 1; figure 3; column 5, line 63 to column 6, line 20; and column 6, lines 32-36 of Bowers), and (b) causing a proof produced by the proofing device to substantially match the color of a print produced by the target halftone printer (column 6, lines 60-63 of Bowers); and a processed print data output (figure 4(160) of Bowers) for providing the data to a proofing device (figure 4(40) of Bowers) different from the target halftone printer (figure 4(156) and column 6, lines 48-63 of Bowers).

Bowers does not disclose expressly embodied lightening logic for creating one or more lightened areas where direct deposition of colorant is to be lightened inside the edge of at least some of the screen dots to be printed but were indirect deposition colorant from overlapping areas is to remain by refraining from printing a subset of pixels within the periphery of a dot; that said target halftone printer is specifically a halftone printing press; and that said proofing device is specifically an ink jet proofing printer.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami); and a proofing device that is specifically a proofing printer (figure 1(3) and column 1, lines 61-62 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for high-output, high-reliability printing. Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the resultant data to a proofing printer, as taught by Usami, rather than a proofing display, as taught by Bowers. The motivation for doing so would have been that generating a printout on a normal halftone printer provides a quick check of the actual printed output before generating the printing plates needed for printing press printing (column 1, lines 24-30 of Usami). Therefore, it would have been obvious to combine Usami with Bowers.

Bowers in view of Usami does not disclose expressly embodied lightening logic for creating one or more lightened areas where direct deposition of colorant is to be lightened inside the edge of at least some of the screen dots to be printed but where indirect deposition colorant from overlapping areas is to remain by refraining from printing a subset of pixels within the periphery of a dot; and that said proofing printer is specifically an ink jet printer.

Rylander discloses direct deposition of colorant is to be lightened inside the edge of at least some of said screen dots to be printed (figure 5 and column 6, lines 36-40 of Rylander); and printing using ink jet printers capable of printing the overlapping areas (column 4, lines 32-36 of Rylander). The inside of the dot is lightened ("thinned"), whereas the edge of the dot is not lightened ("unthinned") (column 6, lines 36-40 of Rylander).

Bowers in view of Usami is combinable with Rylander because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an ink jet printer for a proofing printer. The suggestion for doing so would have been that inkjet printers are an alternate means by which halftone dots are printed. Furthermore, as is well-known in the art, inkjet printers are cheaper and more readily available than most other printers, such as laserjet printers. Additionally, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to thin the inside of a halftone dot without thinning the edge of the halftone dot. The motivation for doing so would have been to enable higher addressability for an inkjet printer while preventing problems of over-inking that tend to occur in inkjet printing (column 2, lines 28-34 of Rylander). Therefore, it would have been obvious to combine Rylander with Bowers in view of Usami to obtain the invention as specified in claims 24 and 25.

Further regarding claim 25: The units of the apparatus of claim 24 provide the corresponding means of the apparatus of claim 25.

Regarding claims 26 and 33: Bowers discloses means for receiving (figure 4(154→156) of Bowers) print data to be printed on a target halftone printer (figure 4(154,156) and column 6, lines 43-48 of Bowers) to which a first halftoning technique has been applied (column 4, line 66 to column 5, line 6 of Bowers), wherein the first halftoning technique produces a plurality of dots (figure 1 and column 4, lines 20-34 of Bowers) and is at least comparable to a target halftoning technique used by the target halftone printer (column 6, lines 43-48 of Bowers); means for adding at least one region of a second color in some of the screen dots (figure 3 and column 4, lines 51-57 of Bowers); and means for providing (figure 4(160) of Bowers) the screen image to a proofing device (figure 4(40) of Bowers) different from the target halftone printer (figure 4(156) and column 6, lines 48-63 of Bowers).

Bowers does not disclose expressly means for lightening at least one region of a second color in some of the screen dots; that said target halftone printer is specifically a halftone printing press; and that said proofing device is specifically an ink jet proofing printer.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami); and a proofing device that is specifically a proofing printer (figure 1(3) and column 1, lines 61-62 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for high-output, high-reliability printing. Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the resultant data to a proofing printer, as taught by Usami, rather than a proofing display, as taught by Bowers. The motivation for doing so would have been that generating a printout on a normal halftone printer provides a quick check of the actual printed output before generating the printing plates needed for printing press printing (column 1, lines 24-30 of Usami). Therefore, it would have been obvious to combine Usami with Bowers.

Bowers in view of Usami does not disclose expressly means for lightening at least one region of a second color in some of the screen dots; and that said proofing device is specifically an ink jet proofing printer.

Rylander discloses means for lightening at least one region of a second color in some of the screen dots (figure 5 and column 6, lines 36-40 of Rylander); and printing using ink jet printers (column 4, lines 32-36 of Rylander).

Bowers in view of Usami is combinable with Rylander because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to lighten regions in some of the screen dots. The motivation for doing so would have been to enable higher addressability for an inkjet printer while preventing problems of over-inking that tend to occur in inkjet printing (column 2, lines 28-34 of Rylander). Therefore, it would have been obvious to combine Rylander with Bowers in view of Usami to obtain the invention as specified in claims 26 and 33.

Further regarding claim 26: The apparatus of claim 33 performs the method of claim 26.

Regarding claim 27: Bowers discloses that the step of applying a first halftoning technique; and the step of adding are applied as a single simultaneous process (column 4, lines 51-57 of Bowers – *overlap a part of first halftoning technique for softproofer*). By combination with Usami, the step of lightening would also be a part of the single simultaneous process since the resultant image dots need to be set for display in the softproofer (column 4, lines 51-57 of Bower).

Regarding claim 28: Bowers discloses the step of outputting the data with a proofing device different from the target halftone printer (column 6, lines 51-63 and column 7, lines 33-36 of Bowers). By combination with Usami and Rylander, as set forth in the arguments regarding claims 26 and 33, the proofing device is specifically an ink-jet proofing printer and the target halftone printer is specifically a target halftone printing press.

Regarding claims 11 and 29: Bowers discloses that the step of applying a first halftoning technique employs dots (figure 1 and column 4, lines 20-28 of Bowers).

Bowers in view of Usami does not disclose expressly that the step of applying a second halftoning technique causes the complete lightening of colorant values for at least some areas of at least some of the dots from the first halftoning technique.

Rylander discloses causing the complete lightening of colorant values for at least some areas of at least some of the dots from a first halftoning technique (figure 5 and column 6, lines 34-40 of Rylander). Thinning of a halftone cell produces complete lightening of colorant values for at least some areas of at least some of the dots from a first halftoning technique.

Bowers in view of Usami is combinable with Rylander because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would

have been obvious to a person of ordinary skill in the art to thin the inside of a halftone dot. The motivation for doing so would have been to enable higher addressability for an inkjet printer while preventing problems of over-inking that tend to occur in inkjet printing (column 2, lines 28-34 of Rylander). Therefore, it would have been obvious to combine Rylander with Bowers in view of Usami to obtain the invention as specified in claims 11 and 29.

Regarding claims 14 and 31: Bowers discloses that the step of applying a first halftoning technique employs dots (figure 1 and column 4, lines 20-28 of Bowers); and that the step of applying a second rendering technique (second halftone technique *as per* the combination of Bowers and Usami) causes the creation of a plurality of areas of a same color within at least some of the dots from the first halftoning technique (figure 1 and column 4, lines 20-28 of Bowers). For any non-white color, areas of same color are produced based on the primary color separations (CMYK) (figure 1 and column 4, lines 20-28 of Bowers).

Regarding claim 32: Bowers discloses a print data input (figure 4(154→156) of Bowers) responsive to a first halftone processor (figure 4(154) and column 6, lines 43-48 of Bowers) employing a first halftoning technique (column 4, line 66 to column 5, line 6 of Bowers), wherein the first halftoning technique is at least comparable to a target halftoning technique used by the target halftone printer (column 6, lines 43-48 of Bowers); an adder (figure 4(160) of Bowers) for adding at least one region of a second color in some of the screen dots (figure 3 and column 4, lines 51-57 of Bowers); and a processed data output (figure 4(40) and column 6, lines 48-54 of Bowers).

Bowers does not disclose expressly embodied lightening logic for lightening at least one portion of each of at least some of the screen dots inside their edges; and that said target halftone printer is specifically a halftone printing press.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for high-output, high-reliability printing. Therefore, it would have been obvious to combine Usami with Bowers.

Bowers in view of Usami does not disclose expressly embodied lightening logic for lightening at least one portion of each of at least some of the screen dots inside their edges.

Rylander discloses embodied lightening logic for lightening at least one portion of each of at least some of the screen dots inside their edges (figure 5 and column 6, lines 36-40 of Rylander). The inside of the dot is lightened ("thinned"), whereas the edge of the dot is not lightened ("unthinned") (column 6, lines 36-40 of Rylander).

Bowers in view of Usami is combinable with Rylander because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to thin the inside of a halftone dot without thinning the edge of the halftone dot. The motivation for doing so would have been to enable higher addressability for an inkjet printer while preventing problems of over-inking that tend to occur in inkjet printing (column 2, lines 28-34 of Rylander). Therefore, it would have been obvious to combine Rylander with Bowers in view of Usami to obtain the invention as specified in claim 32.

Regarding claims 34 and 41: Bowers discloses means for receiving (figure 4(154→156) of Bowers) print data to be printed on a target halftone printer (figure 4(154,156) and column 6, lines 43-48 of Bowers) to which a first halftoning technique has been applied (column 4, line 66 to column 5, line 6 of Bowers), wherein the first halftoning technique produces a plurality of dots (figure 1 and column 4, lines 20-34 of Bowers) and is at least comparable to a target halftoning technique used by the target halftone printer (column 6, lines 43-48 of Bowers); means for altering (figure 4(160) of Bowers) at least a plurality of areas distributed within at least some of the dots with substantially the same color alteration, wherein the step of altering alters the areas to include a same color that is different from the color of the dots (figure 3 and column 5, line 63 to column 6, line 20 of Bowers); and means for providing (figure 4 (160→40) of Bowers) the data to a proofing device (figure 4(40) of Bowers) different from the target halftone printer (figure 4(156) and column 6, lines 48-63 of Bowers).

Bowers does not disclose expressly that said altered areas are distributed *within the edges* of at least some of the dots; that said proofing device is specifically a proofing printer; and that said target halftone printer is specifically a halftone printing press.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami); and a proofing device that is specifically a proofing printer (figure 1(3) and column 1, lines 61-62 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for

high-output, high-reliability printing. Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the resultant data to a proofing printer, as taught by Usami, rather than a proofing display, as taught by Bowers. The motivation for doing so would have been that generating a printout on a normal halftone printer provides a quick check of the actual printed output before generating the printing plates needed for printing press printing (column 1, lines 24-30 of Usami). Therefore, it would have been obvious to combine Usami with Bowers.

Bowers in view of Usami does not disclose expressly that said altered areas are distributed *within the edges* of at least some of the dots.

Rylander discloses altering areas that are distributed within the edges of at least some halftone dots (figure 5 and column 6, lines 36-40 of Rylander). The inside of the dot is altered ("thinned"), whereas the edge of the dot is not altered ("unthinned") (column 6, lines 36-40 of Rylander).

Bowers in view of Usami is combinable with Rylander because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to thin (and thus alter) the inside of a halftone dot without thinning the edge of the halftone dot. The motivation for doing so would have been to enable higher addressability for an inkjet printer while preventing problems of over-inking that tend to occur in inkjet printing (column 2, lines 28-34 of Rylander). Therefore, it would have been obvious to combine Rylander with Bowers in view of Usami to obtain the invention as specified in claims 34 and 41.

Further regarding claim 34: The apparatus of claim 41 performs the method of claim 34.

Regarding claim 36: Bowers discloses that the step of altering operates according to a set of primary colors (column 6, lines 54-60 of Bowers) that is adjusted to increase the altering of at least a first color by a second color in favor of a decrease in the altering of the first color by a third color that is darker than the second color (column 7, lines 4-17 of Bowers – *Altering the RGB colors to compensate for printer dot overlap requires altering a first color by a second color. Said altering would necessarily be done at the expense of the third color. In the case of a lightening compensation, the third color would be darker than the second color.*).

Regarding claim 37: Bowers discloses that the step of altering alters the areas to lighten the color of the dot (column 5, lines 52-56 of Bowers – *compensating for print dot overlap results in lightening the color of the dot in some cases*).

Regarding claim 38: Bowers discloses that the step of altering alters dots corresponding to a spot color defined by print data to match the spot color (column 6, lines 54-63 of Bowers).

Regarding claim 39: Bowers discloses the step of printing the data with a proofing device different from the target halftone printer (figure 6(40) and column 6, lines 51-63 of Bowers). *As per* the combination of Bowers, Usami and Rylander in the arguments regarding claims 34 and 41 set forth above, the proofing device is specifically an ink jet proofing printer and the target halftone printer is specifically a target halftone printing press.

Regarding claim 40: Bowers discloses a print data input (figure 4(154→156) of Bowers) responsive to a first halftone processor (figure 4(154) of Bowers) employing a first halftoning technique (column 4, line 66 to column 5, line 6 of Bowers), wherein the first halftoning technique produces a plurality of dots (figure 1 and column 4, lines 20-34 of Bowers) and is at least comparable to a target halftoning technique used by the target halftone printer (column 6, lines 43-48 of Bowers); embodied altering logic (figure 4(160) of Bowers) for altering at least a plurality of areas distributed within at least some of the dots with substantially the same color alteration that alters the areas to include a same color that is different from the color of the dots (figure 3 and column 5, line 63 to column 6, line 20 of Bowers); and a processed print data output (figure 4(156) and column 6, lines 48-63 of Bowers).

Bowers does not disclose expressly that said altered areas are distributed *within the edges* of at least some of the dots; and that said target halftone printer is specifically a halftone printing press.

Usami discloses a target halftone printer that is a printing press (figure 1(11) and column 4, lines 55-59 of Usami).

Bowers and Usami are combinable because they are from the same field of endeavor, namely digital color image data proofing and correction. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a printing press as the target halftone printer. The suggestion for doing so would have been that printing presses are common in the art, especially for high-output, high-reliability printing. Therefore, it would have been obvious to combine Usami with Bowers.

Bowers in view of Usami does not disclose expressly that said altered areas are distributed *within the edges* of at least some of the dots.

Rylander discloses altering areas that are distributed within the edges of at least some halftone dots (figure 5 and column 6, lines 36-40 of Rylander). The inside of the dot is altered ("thinned"), whereas the edge of the dot is not altered ("unthinned") (column 6, lines 36-40 of Rylander).

Bowers in view of Usami is combinable with Rylander because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to thin (and thus alter) the inside of a halftone

dot without thinning the edge of the halftone dot. The motivation for doing so would have been to enable higher addressability for an inkjet printer while preventing problems of over-inking that tend to occur in inkjet printing (column 2, lines 28-34 of Rylander). Therefore, it would have been obvious to combine Rylander with Bowers in view of Usami to obtain the invention as specified in claim 40.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers (US Patent 5,296,947) in view of Usami (US Patent 5,781,709) and Caruthers (US Patent 5,899,605).

Regarding claim 16: Bowers in view of Usami does not disclose expressly receiving spot color print data for a same print job for which the primary color print data is received, and wherein the step of applying a first halftoning technique is applied to the spot color print data in addition to the primary color data.

Caruthers discloses processing spot color print data for a same print job for which the primary color print data is received (column 2, lines 45-51 of Caruthers), and wherein the step of applying a first halftoning technique (column 2, lines 26-31 of Caruthers) is applied to the spot color print data in addition to primary color data (column 2, lines 47-54 of Caruthers). The "process color" images mentioned in Caruthers are images that are processed using halftone techniques (column 2, lines 26-31 of Caruthers). However, the image is first processed for spot colors (column 2, lines 45-54 of Caruthers).

Bowers in view of Usami is combinable with Caruthers because they are from the same field of endeavor, namely color image data halftoning. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to first process for spot colors, as taught by Caruthers, thus receiving spot color print data for the same print job which is received and halftoned as taught by Spence. The motivation for doing so would have been to provide better color rendering for specific, non-primary colors that the user considers important in the printed color image. Therefore, it would have been obvious to combine Caruthers with Bowers in view of Usami to obtain the invention as specified in claim 16.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers (US Patent 5,296,947) in view of Usami (US Patent 5,781,709), Rylander (US Patent 5,602,572), and Fisch (US Patent 5,598,272).

Regarding claim 20: Bowers in view of Usami and Rylander does not disclose expressly a step of receiving an adjustment signal and a step of adjusting parameters of the step of lightening in response to the step of receiving a user adjustment signal.

Fisch discloses receiving an adjustment signal; and adjusting lightening parameters in response to the step of receiving a user adjustment signal (column 2, lines 26-45 of Fisch).

Bowers in view of Usami and Rylander is combinable with Fisch because they are from the same field of endeavor, namely image data printing and proofing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to adjust parameter, such as the lightening parameters, based on user input. The motivation for doing so would have been to allow a trained printer to determine the proper amount of adjustment needed, since the proofing process is subject to a variety of different conditions (column 1, lines 29-42 of Fisch). Therefore, it would have been obvious to combine Fisch with Bowers in view of Usami and Rylander to obtain the invention as specified in claim 20.

10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowers (US Patent 5,296,947) in view of Usami (US Patent 5,781,709), Rylander (US Patent 5,602,572), and Vinck (US Patent 5,953,988).

Regarding claim 30: Bowers discloses that the step of applying a first halftoning technique employs dots (figure 1 and column 4, lines 20-28 of Bowers).

Bowers in view of Usami and Rylander does not disclose expressly that the step of applying a second halftoning technique causes the overlaying of colorant from at least some areas of at least some of the dots from the first halftoning technique with a different colorant.

Vinck discloses overlaying colorant from at least some areas of at least some of the dots from a first halftoning technique with a different colorant (figure 4; column 4, lines 59-61; and column 5, lines 30-33 of Vinck).

Bowers in view of Usami and Rylander is combinable with Vinck because they are from the same field of endeavor, namely digital image data halftoning and processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to overlay different colorants. The motivation for doing so would have been to produce a larger variety of colors (column 5, lines 30-33 of Vinck). Therefore, it would have been obvious to combine Vinck with Bowers in view of Usami and Rylander to obtain the invention as specified in claim 30.

Conclusion

11. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson
Examiner
Technology Division 2625

JAT
18 July 2007

DAVID MOORE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600